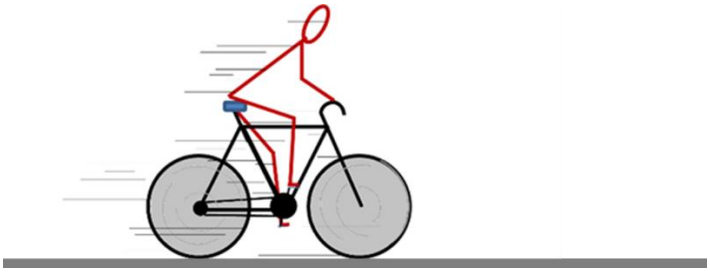
Cycling

A cyclist is freewheeling along a level road.
They are not pedalling.



Some students are discussing the forces acting on the cyclist.

Jaydon: There's a force in the forwards direction. The force gets smaller as the cyclist slows down.

Kaci: The road does not push up, it just gets in the way and stops gravity pushing the cyclist into the ground.

Nikita: Gravity doesn't act on objects that are already on the ground.

Rehan: There is a force in the forwards direction and frictional forces acting in the backwards direction.

Thomas: There is an upwards force from the ground acting on the cyclist, but the gravitational force is bigger.

To answer

1. Who do you think is correct about the forces on the bike?
2. Who do you think is wrong about the forces on the bike?
   What would you say to help them understand?
3. Draw a free body (force) diagram for the cyclist.
   Label each force: "*The force of* _____ *on* _____."
4. Draw a free body diagram for the cyclist freewheeling downhill.